CLAIM AMENDMENTS

1. (Currently Amended) A semiconductor device comprising:

a semiconductor substrate;

a channel layer ~~formed~~ on the semiconductor substrate;

a Schottky layer ~~formed~~ on the channel layer;

a first layer having a narrower band gap than the Schottky layer, the first layer ~~inserted in~~ being disposed within the Schottky layer;

a second layer having a band discontinuity with the Schottky layer, the second layer ~~inserted in~~ being disposed within the Schottky layer, ~~and the second layer disposed~~ on the first layer;

a gate electrode disposed on the Schottky layer;

first and second n+ ~~layer formed~~ layers on the Schottky layer on ~~both~~ opposite sides of the gate electrode~~, the n+ layer having discontinuous parts positioned on the gate electrode~~;

a source electrode ~~formed~~ on the first n+ layer; and

a drain electrode ~~formed~~ on the second n+ layer.

2. (Currently Amended) ~~A~~ The semiconductor device according to claim 1, wherein the first layer has ~~a~~ lattice ~~defect on boundary face~~ defects at an interface between the first layer and the Schottky layer.

3. (Currently Amended) A semiconductor device comprising:

a channel layer ~~formed~~ on a semiconductor substrate;

a Schottky layer ~~formed~~ on the channel layer;

a p-type-doped layer ~~inserted in~~ disposed within the Schottky layer;

an n-type-doped layer ~~inserted in the~~ disposed within the Schottky layer~~, the n-type doped layer disposed~~ on the p-type-doped layer;

a gate electrode disposed on the Schottky layer;

first and second n+ ~~layer formed~~ layers on the Schottky layer on ~~both~~ opposite sides of the gate electrode~~, the n+ layer having discontinuous parts positioned on the gate electrode~~;

a source electrode ~~formed~~ on the first n+ layer; and

a drain electrode ~~formed~~ on the second n+ layer.

4. (Currently Amended) ~~A~~ The semiconductor device according to claim 1, further comprising a p+ contact layer connecting the source electrode with the Schottky layer, the p+ contact layer being disposed ~~below~~ opposite the source electrode.

5. (Currently Amended) ~~A~~ The semiconductor device according to claim 1, further comprising a via-hole penetrating from the source electrode to the semiconductor substrate.

6. (Currently Amended) A semiconductor device comprising:

a channel layer ~~formed~~ on a semiconductor substrate;

a Schottky layer ~~formed~~ on the channel layer;

a gate electrode disposed on the Schottky layer;

a compound semiconductor layer containing phosphorus ~~(P)~~ and covering ~~the surface of~~ the Schottky layer;

first and second n+ ~~layer formed~~ layers on the compound semiconductor layer containing phosphorus ~~(P),~~ on ~~both~~ opposite sides of the gate electrode~~, the n+ layer having discontinuous parts positioned on the gate electrode~~;

a source electrode ~~formed~~ on the first n+ layer; and

a drain electrode ~~formed~~ on the second n+ layer.

7. (Currently Amended) ~~A~~ The semiconductor device according to claim 6, further comprising:

a first pair of first and second compound semiconductor layers containing phosphorus ~~(P) which sandwich~~ sandwiching the first n+ layer; and

a second pair of first and second compound semiconductor layers containing phosphorus ~~(P) which sandwich~~ and sandwiching the second n+ layer.

8. (Currently Amended) ~~A~~ The semiconductor device according to claim 6, further comprising:

a first pair of ~~third~~ first and ~~fourth~~ second compound semiconductor layers containing phosphorus ~~(P)~~ sandwiched between the first n+ layer and the Schottky layer;

a first n- layer sandwiched between the first pair of ~~third~~ first and ~~fourth~~ second compound semiconductor layers containing phosphorus ~~(P)~~.

a second pair of ~~third~~ first and ~~fourth~~ second compound semiconductor layers containing phosphorus ~~(P)~~ sandwiched between the second n+ layer and the Schottky layer; and

a second n- layer sandwiched between the second pair of ~~third~~ first and ~~fourth~~ second compound semiconductor layers containing phosphorus ~~(P)~~.

9. (Currently Amended) ~~A~~ The semiconductor device according to claim 6, wherein the compound semiconductor layer containing phosphorus ~~(P)~~ is ~~made of~~ InGaP.

10. (Currently Amended) ~~A~~ The semiconductor device according to claim 1, further comprising first and second electron supply layers ~~which sandwich~~ sandwiching the channel layer.